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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,967	03/11/2004	Richard Lang	LANG3004/JEK	1925
23364	7590	06/29/2005	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			BLACKMAN, ROCHELLE ANN J	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/796,967

Applicant(s)

LANG ET AL.

Examiner

Rochelle Blackman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-24 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 18-24 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 3/11/04 & 4/11/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 18-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 18, 19, 21/18, 21/19/18, 22/21/18, and 22/21/19/18 are rejected under 35 U.S.C. 102(b) as being anticipated by Satou (U.S. Patent No. 6,517,212).

Regarding claim 18, Satou discloses a projection device (see FIGS. 4-8) wherein white light emitted from a light source system is split in different colors and transmitted to respective light valves, said light source system comprising: a plurality of light sources (see 1 and 2 of FIG. 4A); a plurality of curved light reflectors (see 3a and 4a of FIG. 4A) and optical components (for example, see 6-8 of FIG. 4A) for collecting the light rays from the light sources and creating substantially collimated light beams such that a single collimated beam corresponds to a single light source; dividing elements (see 5 of Fig. 4A; 26, 27

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of FIG.7A; and 28 of FIG. 8) for dissecting the collimated beams into smaller collimated light bundles, said dividing elements interlacing the light bundles from the light sources into one light beam ("dividing elements" 5 or 26,27 or 28 are considered to be capable of "interlacing the light bundles from the light sources into one light beam"); wherein the resulting interlaced light beam propagates in a substantially collimated or parallel state ("dividing elements" 5 or 26,27 or 28 are considered to be capable of producing a "resulting interlaced light beam" that "propagates in a substantially collimated or parallel state").

Regarding claim 19, Satou discloses wherein exit sides of the curved light collecting reflectors face each other (see position of 3a and 4a in FIG. 4A, 7A and 8) and the dividing elements comprise a plurality of rectangular mirrors, mirrored prisms or internally reflecting prisms (see 5 of Fig. 4A; 26, 27 of FIG.7A; and 28 of FIG. 8) producing an interlaced and collimated beam propagating in a direction at 90 degrees to the exit side of the curved light collecting reflectors.

Regarding claim 21/18 and 21/19/18, Satou discloses wherein light color splitting elements (see 15 and 16 of FIG. 4A) are inserted in the path followed by the light downstream from the interlacing elements, said color splitting elements dividing the collimated white light into two or more collimated and highly uniform colored light channels (see function of 15 and 16 in FIG. 4A).

Regarding claim 22/21/18 and 22/21/19/18, Satou discloses wherein the path followed by the light downstream from the interlacing elements and upstream from the light splitting elements, is free from any optical component

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(see area of optical light path between element 9 and “color splitting element” 15 in FIG. 4A).

2. Claims 18, 20, 21/18, 21/20/18, 22/21/18, and 22/21/20/18 are rejected under 35 U.S.C. 102(b) as being anticipated by Sawai (U.S. Patent No. 6,183,093).

Regarding claim 18, Sawai discloses a projection device (see FIGS. 1-5) wherein white light emitted from a light source system is split in different colors and transmitted to respective light valves, said light source system comprising: a plurality of light sources (see 3a and 3b of FIGS. 1 and 2); a plurality of curved light reflectors (see 2a and 2b of FIGS. 1 and 2) and optical components (see 8 of FIGS. 1 and 2) for collecting the light rays from the light sources and creating substantially collimated light beams such that a single collimated beam corresponds to a single light source; dividing elements (see A and B of element 4 of FIGS. 1-4) for dissecting the collimated beams into smaller collimated light bundles, said dividing elements interlacing the light bundles from the light sources into one light beam (see function of 4 “dividing elements” A and B of element 4 in FIGS. 1-4); wherein the resulting interlaced light beam propagates in a substantially collimated or parallel state (see shape of light rays emitted from A and B of element 4 in FIGS. 1-4).

Regarding claim 20, Sawai discloses wherein exit sides of the curved light collecting reflectors are located substantially in the same place and face the same direction (see location and position of “curved light reflectors” 2a and 2b in FIGS. 1 and 2); wherein the dividing elements comprise a plurality of rectangular

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mirrors or mirrored prisms (see A and B of element 4 in FIGS. 1 and 2) producing an interlaced light beam propagating in the same direction as the exit side of the curved light collecting reflectors.

Regarding claims 21/18 and 21/20/18, Sawai discloses wherein light color splitting elements (see 9 and 10 of FIG. 1) are inserted in the path followed by the light downstream from the interlacing elements, said color splitting elements dividing the collimated white light into two or more collimated and highly uniform colored light channels (see function of 9 and 10 in FIG. 1).

Regarding claims 22/21/18 and 22/21/20/18, Satou discloses wherein the path followed by the light downstream from the interlacing elements and upstream from the light splitting elements, is free from any optical component (see area of optical light path between element 7 and "color splitting element" 9 in FIG. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 23/21/18, 23/21/19/18, 24/22/21/18, and 24/22/21/19/18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satou (U.S. Patent

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No. 6,517,212) in view of Kruschwitz et al. (U.S. Patent Application Publication No. 2003/0039036).

Satou discloses the claimed invention except for "light integrating components optimized for each color and optimized to be used with collimated light, said integrating components inserted in their corresponding color channels in the path followed by their collimated light downstream of the light splitting elements"; and "pre-polarizing components optimized for each color, said pre-polarizing components inserted in their corresponding color channels in the path followed by the light downstream, of the light integrating elements".

Kruschwitz teaches providing light integrating components (see 172R, 172G, 172B of FIG. 6) optimized for each color and optimized to be used with collimated light, said integrating components inserted in their corresponding color channels in the path followed by their collimated light downstream of the light splitting elements; and pre-polarizing components (see 170R, 170G, 170B of FIG. 6) optimized for each color, said pre-polarizing components inserted in their corresponding color channels in the path followed by the light downstream, of the light integrating elements.

It would have been obvious to one ordinary skill in the art at the time the invention was made to provide the "projection device" of the Satou reference with "light integrating components" and "pre-polarizing components" for each color, as taught by Kruschwitz for the purpose of providing a full color display system which allows control of the illumination brightness to optimize system design, and

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exhibits reduced speckle and eliminates coherence artifacts at a spatial light modulator while exhibiting high throughput efficiency (see pg. Paragraph [0012]).

2. Claims 23/21/18, 23/21/20/18, 24/22/21/18, and 24/22/21/20/18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawai (U.S. Patent No. 6,183,093) in view of Kruschwitz et al. (U.S. Patent Application Publication No. 2003/0039036).

Sawai discloses the claimed invention except for "light integrating components optimized for each color and optimized to be used with collimated light, said integrating components inserted in their corresponding color channels in the path followed by their collimated light downstream of the light splitting elements"; and "pre-polarizing components optimized for each color, said pre-polarizing components inserted in their corresponding color channels in the path followed by the light downstream, of the light integrating elements".

Kruschwitz teaches providing light integrating components (see 172R, 172G, 172B of FIG. 6) optimized for each color and optimized to be used with collimated light, said integrating components inserted in their corresponding color channels in the path followed by their collimated light downstream of the light splitting elements; and pre-polarizing components (see 170R, 170G, 170B of FIG. 6) optimized for each color, said pre-polarizing components inserted in their corresponding color channels in the path followed by the light downstream, of the light integrating elements.

It would have been obvious to one ordinary skill in the art at the time the invention was made to provide the "projection device" of the Sawai reference with

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"light integrating components" and "pre-polarizing components" for each color, as taught by Kruschwitz for the purpose of providing a full color display system which allows control of the illumination brightness to optimize system design, and exhibits reduced speckle and eliminates coherence artifacts at a spatial light modulator while exhibiting high throughput efficiency (see pg. Paragraph [0012]).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB

A handwritten signature in cursive script, appearing to read 'Judy Nguyen', is positioned above the printed name.

JUDY NGUYEN
SUPERVISORY PATENT EXAMINER